Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

search in the mechanic arts and engineering, and the sciences, such as physics and chemistry, on which they are based. The agricultural interests have always had great influence on legislation and in this case they have led the way. It is to be hoped that research in the engineering sciences will now be equally encouraged by the passage of the Newlands bill, which appropriates $15,000 to each state and territory for conducting investigations in engineering and publishing the results.

Some scientific men may believe that more could be accomplished by the establishment of one great research laboratory or by granting the money only to institutions already distinguished for their contributions to science. There is, however, much to be said for initiating investigation in fifty widely scattered centers where work is already being done in agricultural science. It brings the value of research to the attention of the students of the college and the people of the state, and each station has the possibility of great development. In any case the passage of the bill as it stands is the most feasible method at present to extend research and will forward rather than interfere with other methods.

RESOLUTIONS OF THE COMMITTEE OF ONE HUNDRED

THE Committee of One Hundred on Scientific Research of the American Association for the Advancement of Science has given consideration to the Newlands bill and has passed the resolutions which follow:

WHEREAS the applications of science have made democracy possible by so decreasing the labor required from each that equal opportunity can be given to all;

WHEREAS in a democracy scientific research, which is for the general benefit and can not usually be sold to individuals, must be supported by the public;

WHEREAS a combination of national and state support and control is desirable in education and in research and its value has been fully proved by the land grant colleges of agriculture and the mechanic arts, established in the states and territories by the Congress in 1862;

WHEREAS there is in connection with each of those colleges an agricultural experiment station to which the national government appropriates annually $30,000 for agricultural research, the results of which have been of untold value to agriculture and to the nation;

WHEREAS experiment stations for the mechanic arts and engineering, including in their scope research in physics, chemistry and other sciences, would be of equal value to the nation and would repay manyfold their cost, and

WHEREAS at the present time attention is directed to the need of preparation for every emergency, and this can best be accomplished by the advancement of science and the ability of our people to meet new conditions as they arise;

Resolved that the Committee of One Hundred on Scientific Research of the American Association for the Advancement of Science earnestly recommends the passage of the Senate Bill introduced by Mr. Newlands to establish experiment stations in engineering and in the other branches of the mechanic arts in connection with the colleges established by the Congress in the several states and territories, with an annual appropriation to each of $15,000 for conducting investigations and experiments and printing and distributing the results; and further

Resolved that the committee urges each of the ten thousand members of the American Association for the Advancement of Science to use all proper efforts to bring the importance of the measure before members of the congress and to the attention of the public.

NATIONAL PRODUCTIVITY IN SCIENCE

As claimed in the preamble to the resolutions of the Committee of One Hundred, science can only flourish in a democracy if it is supported by the people. A democratic system is favorable to mechanical inventions for there are large numbers who have a common school education, who see the need and have the opportunity to devise improvements in their tools. In the cotton gin and the harvester, the sewing machine and the typewriter, the telegraph and the telephone, in the development of the

DARWIN

steamboat and the railway, the automobile and the aeroplane, America has done more than its share. But as the machinery of civilization becomes more complicated, we can no longer depend on isolated invention, but must undertake investigations requiring long preliminary training and complex adjustments. To a certain extent the need is met by the industrial laboratories which by aid of the patent office now conduct elaborate investigations. But the ideal solution of the problem is to pay men for the value of their services or to employ men to do the work for which they are most competent, and this can best be accomplished if the people, as a whole, will make the investment and reap the profits. In no better way can this be done than by the support of the scientific bureaus of the government and the establishment of experiment stations in each state.

An aristocratic social system has in the past been more favorable than a democracy to the production of men of exceptional performance in science. A selected class, possessing inherited ability and inherited wealth, can supply a few men far surpassing in ability the average man and can give them opportunity and appreciation. But we may hope that as soon as the value of research in pure and applied science, and, it may be added, of production in letters and the fine arts, are widely understood, a democracy may have a wider field from which to select men of special ability and will provide adequate opportunity and rewards.

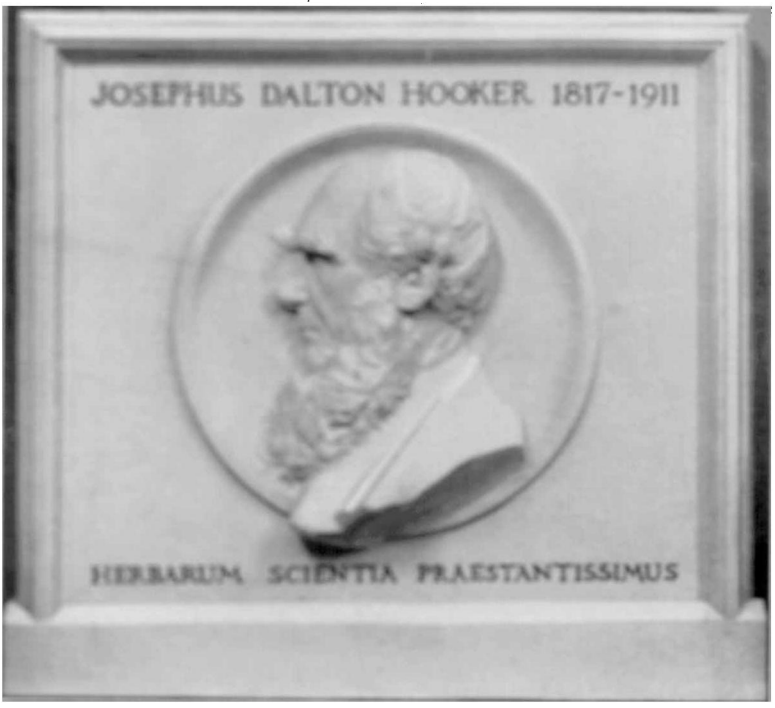
It would be interesting if we had a comparative study of the productivity

WALLACE

of different nations in science, which would determine how it has changed in quality, quantity and direction from period to period, and how far it has depended on natural ability and how far on social institutions. There is some basis to assume that the smaller European nations, Switzerland, Holland and the Scandinavian countries, have done remarkably well, that France has fallen behind Great Britain and Germany, that Great Britain has had the greatest number of men of exceptional performance, that Germany has produced the largest number of competent investigators and the best organization for research.

There are here reproduced photographs of four plaques which have been unveiled in Westminster Abbey, representing Darwin, Wallace, Hooker and Lister. They are fit representatives of the great men who gave distinction to Great Britain in the Victorian era. Of those men only Hooker held a scientific position, and he too is typical of the aristocratic system, for he inherited not only his ability, but also his wealth, his title and the directorship of the Kew Botanical Gardens from his father. Darwin is particularly notable as a representative of aristocratic and individualistic genius. He came from a family line manifesting great ability and having ample wealth; he married a wife from a similar line and transmitted to his children both ability and wealth. He filled no position but did his work while living as a country gentleman.

It is doubtful whether again we shall look on men like these. In Germany



HOOKER

also there have been distinguished leaders, but, on the whole, the contribution of that country to science has come from the large number of individuals engaged in scientific research at the universities. In the past the United States has not produced scientific leaders comparable to English scientific men of the nineteenth century or numbers of able investigators equal to those of Germany. But it may be that we have been gradually assuming a position in which we are contributing to the advancement of science on terms of equality with these nations. If the science with which the writer of this note is concerned may be taken as an example, it may be claimed that we produced in William James the greatest contemporary psychologist, and we appear to have more competent workers in psychology than any other nation. "Who's Who in Science" an English publication, selects for biographical sketches psychologists as follows from the different nations: United States, 95; Germany, 37; Great Britain, 30; Austria-Hungary, 13; France, 12; Italy, 12; Switzerland, 10; Russia, Holland and Norway, each 6.

In so far as the apparent superiority of America in psychology is due to the fact that it is a new science, the promise for the future in other directions is but emphasized. We are providing opportunity for research work in all the sciences, and we may be confident that the ability exists and only needs the chance to exhibit itself. The war will so cripple the resources in men and money of the great nations of Europe that peculiar responsibility is thrown upon us. We may also hope that the lesson of the war to us will be that the best preparation for the future is the development of our educational and scientific institutions.